

Agricultural Utilization Research Institute (AURI)

Testimony on Advanced Energy Initiative

Good afternoon. My name is Al Christopherson. I am chairman of the board for the Agricultural Utilization Research Institute (AURI), a Minnesota nonprofit corporation that works to improve the economy of our state through the development of new and value-added uses for agricultural commodities.

I appreciate the opportunity to appear before you today because I believe we are at a moment in time when tremendous strides can be made to change the way we produce and consume energy in this country.

As outlined by the President's Advanced Energy Initiative, there are numerous opportunities for those advancements to be made. AURI is convinced there are areas where agriculture can play a leading role in the development of new sources for transportation fuel, home heating and power generation. In addition, a national focus and policy supporting the

development of renewable energy is needed to develop clear goals consolidated by implementation.

Policy development is often a necessary precursor to change. The President's Initiative provides the vision, what is needed now is implementation.

For nearly 20 years, AURI has provided scientific technical assistance to projects that utilize agricultural commodities in innovative ways. AURI's mission supports the President's Initiative in a number of areas.

AURI facilitates the development of new renewable energy enterprises, increasing the overall capacity for renewable energy production. This includes significant work in ethanol, biodiesel development and biomass energy advancement. AURI has also expanded well beyond those areas to include biogas production from anaerobic digesters, gasification of agricultural biomass, turbine fuel assessment, and wind and biodiesel hybrid applications to name a few.

In addition to energy development, AURI fosters the development of new products that displace petroleum-based materials. We have successfully assisted in the development of ag-based polymers, functional foods, fertilizers, lubricants and dozens of other food and industrial products.

Renewable energy from agricultural sources has generated significant interest in recent years as opportunities arise and technology advances. Implementing an advanced energy plan to support further development will help to sustain that surge both on a consumer and industrial level. We know this because it is happening right now.

Minnesota has been a proactive leader in the advancement of renewable energy. Much of this activity began long before high crude oil prices caught the nation's collective attention and renewed calls for alternative energy development. Rather, growers, ranchers and AURI recognized the opportunity bio-based businesses presented for adding value, sustaining strong rural economies and promoting energy independence.

Minnesota entered the ethanol industry in 1983 with the opening of a farmer-owned ethanol plant in Marshall. In 1997, Minnesota became the

first state to have 10 percent ethanol added to gasoline sold year round throughout the state. As a result of legislation and growing market opportunities, the state now has 16 operating ethanol plants with several more in various stages of development. These plants are currently producing more than 550 million gallons of ethanol annually. Further, Minnesota has over 220 operating E-85 fuel pumps. Ethanol is not only being produced here, it is also being used here. The distribution network, utilization and interest in ethanol grows stronger every day.

In 2005, Minnesota also became the first state to mandate 2 percent biodiesel to be added to every gallon of diesel fuel sold. There are now four biodiesel refineries operating in the state, producing over 60 million gallons each year.

Recognizing the opportunity created by our state's forward thinking policies on renewable energy, AURI created the Minnesota Center for Producer-Owned Energy. This Center was established through USDA's Agricultural Innovation Center Demonstration Program. The Center serves as a working, ready for implementation model for spurring ag-based renewable energy production in the U.S. and provides a road map for supporting the President's Initiative.

The Center facilitates the development of farmer-owned enterprises that utilize agricultural commodities, biomass and coproducts for the production of energy.

The Center established partnerships with commodity groups, public and private organizations, universities and other agencies. These partnerships result in maximized impact, access to resources and expertise from outside AURI. They also produce broad-based support for the development of renewable energy projects in Minnesota and encourage the leveraging of additional funds.

The policy that created the Center for Producer-Owned Energy originated in the 2002 Farm Bill. The key to success is AURI's development of a solid implementation plan to carry out the policy. In concert with the scientific technical resources of AURI, the Center has successfully implemented 17 projects impacting more than 9,000 producers in the past 2 years. Activities include the formation of several corn-based ethanol plants in underserved areas, the development of what could become the nation's first commercial cellulose-based ethanol plant and the gasification of agricultural biomass for

electrical power. Additional projects range from testing a biodiesel-powered ATV to examining the feasibility of using biodiesel in working riverboats.

These renewable energy enterprises are all in rural areas utilizing locally-produced commodities. They are adding jobs to the region and are reducing consumption of petroleum. Many of these facilities are producer-owned, assuring that accumulated wealth stays in the rural environment.

In addition to strong commodity and grower group support, the Minnesota Center for Producer-Owned Energy has established a strong relationship with the Bio-Business Alliance of Minnesota, linking agriculture with organizations such as 3M, the Mayo Clinic and Medtronic. These relationships will help to move agricultural commodities into new, non-traditional markets. In some cases, they could supplant petrochemicals as source ingredients.

Associations with Bemidji State University and Southwest Minnesota State University will result in the nation's first advanced degree in renewable energy management, promoting best practices and quality in energy production.

While the Center for Producer-Owned Energy and AURI are Minnesota based, the framework could be replicated elsewhere. It has been our experience that providing feasibility analysis and scientific technical experience coupled with a sound implementation plan during the developmental stage is vital to realizing a successful enterprise.

Merging technology with markets, best manufacturing and quality practices with a trained, renewable energy workforce, creates a strong foundation for energy development and business success.

This country was formed as an agrarian society and later moved to an industrial focus. We are now in an era where ideas and innovation are driving our economy. We have seen how this innovation is linking the past with the future. Innovative technology is providing opportunity for strong agricultural activities, which are leading to industrial development. Nowhere is this cycle more evident than in the promise of renewable energy.